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ASCERTAINING AND FORECASTING BUSINESS
CONDITIONS BY THE STUDY OF STATISTICS.*BY ROGER W. BABSON, *President of the Babson Statistical Organization.*

In talking with bankers, manufacturers, and merchants in various sections of the country, I find that the great majority of these men entirely ignore two very important facts, *vis.*:

First, they feel that their business depends simply upon conditions in the territory in which they operate: for example, a large local jeweller in Cleveland states that he sells only in Cleveland, and thus he is interested only in conditions in Cleveland; while the manager of a shoe jobbing house, in Boston endeavors to convince me that he is interested only in New England conditions. Therefore, these men believe that they have little use for statistics. They are, however, making a great mistake.

Secondly, the great majority of our manufacturers and merchants feel that they are interested in the progress of only their own line of goods. The majority of such men are careful readers of their own trade papers, but they spurn the idea of endeavoring to keep in touch with the conditions in other lines, or to study statistics of a general nature. This also is a distinct mistake. It is largely owing to these reasons that the work of statisticians is so little appreciated by the average business man today.

However, those of us who today are engaged in this work are teaching bankers, manufacturers, and merchants the practical importance of statistics, *vis.*: (1) that each business, even although apparently local, is dependent on the business of the entire country; and (2) that each business is dependent on the condition of business in other lines. Therefore, I feel that the first and greatest need of the business man today is that he should realize this fact: that *his business in his own small locality is dependent upon conditions throughout the entire country and the business in his own distinct line is dependent*

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upon conditions in every other line. When the business men of America study statistics from this point of view, the United States will make a great advance in banking, manufacturing, and distribution. Moreover, it is due very largely to the fact that the average business man does *not* recognize these fundamental principles that he is groping in the dark and looking toward a Sherman Act, a Monetary Commission, some Tariff Readjustment, a Ship-Subsidy, or something else of an artificial nature to solve his problems. When our business men appreciate the importance of fundamental statistics, most of our national problems will be solved; but not until then.

HOW THE MERCHANTS CAN KEEP IN TOUCH WITH BUSINESS CONDITIONS THROUGHOUT THE COUNTRY.

I have said that the business man should first keep in touch with conditions all over the country, even although his own trade is localized to one community. The reason for this is very obvious. Assume that some one in this audience is at the head of a large department store in Pittsburg. All will readily admit that the trade of this department store depends very largely upon the condition of business in Pittsburg and that, if the buyers of this store could know what conditions will be in Pittsburg during the coming year, it would be of distinct advantage to them. It will also be granted that the conditions in Pittsburg during the coming year depend upon the condition of the steel, the iron, the cement, and the other leading industries centered in Pittsburg. The condition of these industries, however, depends not on the local Pittsburg conditions, *but on conditions throughout the entire country.*

Therefore, the trade of this local department store, which sells only to Pittsburg people, depends upon general as well as local conditions. The conditions in the Northwest and the Southwest determine whether or not the railroads in those distant territories will be double tracked, necessitating the ordering of steel rails from Pittsburg. The crops of the great Central West affect the business of its great cities, which in turn settles the question as to whether or not new structures

will be erected during the coming year, which in turn influences local Pittsburg conditions; and so it is with all cities throughout the country. The prosperity of Pittsburg is dependent on the prosperity of the country as a whole; tell me what the conditions *outside* of Pittsburg will be, and I will tell you what the conditions *in* Pittsburg will be. To ascertain these conditions, resort must be had to statistics. Thus the statistician has a great opportunity and a real duty to perform.

INCREASING SALES.

For some years my own organization has been supplying detailed reports from the hundred or more leading cities of the country, stating as briefly as possible whether business is good or poor, improving or declining, or at a standstill. Such reports are now revised by our statistical department and mailed to subscribers every two weeks, thus showing manufacturers and merchants the actual business conditions in all sections of the country. We find, however, that even these do not fully meet the needs of the busy merchant nor those even of the sales manager and the manager of the credit department. Therefore, two maps of the United States are prepared and issued every two weeks, both of which are usually mailed to the president or general manager, personally, of the corporation which employs us. One of these maps is what is known as the "Optimistic Map," showing where business is best, where failures are fewest, where the crops are the most promising, and where various other conditions are such as to attract trade. If a corporation or firm does other than a local business, the president turns over this map to his sales manager and advertising man so that the routing of the salesman, the distribution of the advertising, and all other work connected with the extending of sales may be centered on that part of the country where the greatest opportunity exists. In other words, such a map is primarily to afford the head of the business a bird's eye view of the conditions throughout the entire country which are shown more in detail in the reports above referred to. In short, our statisticians are simply supplying suppressed news months

before it appears in the public press and magazines (see Exhibit A).

REGULATING CREDITS.

Supplementing this map, another is prepared and sent to the head of the corporation employing us, showing the dark side of business. This may be called the "Pessimistic Map." It shows where business is poor, where the crops are uncertain, where failures are on the increase, and where credit conditions should be especially watched. Here again, if the corporation does other than a local business, the president can make still further use of this map by turning it over to his credit department, enabling this department to avoid the unfair and harmful system of "shutting down" on everybody and all sections of the country in the same proportion. Instead, the credit department may contract credits in one part of the country and possibly expand them in another section in a common sense and legitimate manner.

WATCHING CONDITIONS IN OTHER LINES.

In the same way, our statistics are used to keep business men informed as to conditions in other lines than their own. "Failures," for instance, are not only given in total, but are sub-divided into various divisions, such as: iron, machinery and tools; woolens, carpets, and knit goods; cottons, lace, and hosiery; lumber; clothing and millinery; chemicals and drugs; paints and oils; milling and bakers; leather, shoes, and harness; liquors and tobacco; glass, earthenware, and bricks. Also on these maps, different trades are referred to, such as: groceries; meats and fish; hotels and restaurants; clothing and furnishing; dry goods and carpets; shoes, rubbers, and trunks; furniture and crockery; hardware, stoves, and tools; chemicals and drugs; paints and oils; jewelry and clocks; books and papers; etc.

But, in order to keep themselves informed as to general conditions, some manufacturers and merchants prefer to receive, weekly, certain statistics on a sheet like the annexed: (see Exhibit B). Here are the latest figures, corrected each

week, on "New Building"; this table includes the twenty largest cities of the country. The "Bank Clearings" also appear on this sheet, first for New York City and then for the entire country outside of New York. There are statistics on "Business Failures" by individual firms and by liabilities. There are figures on both Emigration and Immigration, all of which are of distinct aid in accurately determining mercantile conditions.

Next appears a group of statistics on monetary conditions; the "Loans" of the banks and the "Deposits" of the banks are given, together with the "Cash" held and the "Surplus Reserve." A comparison of the latest Comptroller's Report with nine other Comptroller's Reports of the same season of the year is given. I always say to those who borrow money, that there are two items which should be constantly watched, namely the percentage of loans to deposits and the percentage of cash to loans. Under this same group of statistics on monetary conditions are the figures on foreign trade including "Imports" and "Exports" and the "Balance of Trade" figures. These show merchants which way the tide is running; so at a glance they can note the change the moment the tide turns. There are also tables on "Money Rates," both domestic and foreign; for the relation between the two is intensely valuable in forecasting changes in credit conditions. There are also various other tables of statistics which bear indirectly on these points, the most interesting of which are the "Production of Gold" figures and a comparison of the "Commodity Prices," Index Numbers of America and England.

Many lines are very dependent on the investment situation, especially the jewelry trade, the automobile trade, the fine rug trade, and the specialty stores of our large cities. Merchants engaged in them use statistics relative to the "Transactions in Securities," the "Average Prices of Stocks," the "Average Prices of Bonds," the "New Securities Listed," the "New Corporations Organized," the latest "Railroad Earnings" and idle car figures, etc., etc. Then, of course, such sheets contain the latest statistics of the crops, with the estimated acreage, condition, and production. Not only do they afford valuable information relative to winter wheat,

spring wheat, corn, cotton, but also statistics relative to pig iron, copper, etc.

Such maps and sheets are revised continually and contain the very latest facts and figures obtainable and the corresponding figures for the same months for a period of nine or ten years for purposes of comparison. But this is not all; many statisticians have found that the average manufacturer or business man is too nervous to look at these figures, but wishes to receive them in chart form and so they are charted.

In endeavoring to keep merchants and manufacturers informed as to conditions in different lines, we find it necessary to send a letter once a week conveying the conclusions reached by our organization. One week this letter may treat of the steel and iron trade; next week of the textile conditions; another week of money rates (for money is just as much of a commodity as iron or cotton); another week of the grains; and, finally, once each month a letter on investment conditions is prepared which gives an unbiased opinion as to whether the general course of the stock market or bond market is upward or downward.

FORECASTING FUTURE CONDITIONS.

But all this statistical work, which I have thus far mentioned, is of value primarily in keeping a business man acquainted with actual conditions existing throughout the country. The subject assigned to me, however, is in part "Forecasting" business conditions by statistics, and I am frank to say that I believe the statistician has in this also a great opportunity. Statistics have a far greater purpose than simply that of enabling business men to learn what the present conditions are; they can also aid in anticipating what will happen. Of course, the captain of an ocean liner wants to know what the weather is today, and carefully writes a description of it in his log, but primarily he is interested in what the weather will be tomorrow. To anticipate future conditions he uses his barometer and other scientific instruments. As a captain of one of the Cunard liners said to me a while ago: "Mr. Babson, I have only one use for wireless

telegraphy. As to what is happening at home, I care not, nor do I wish wireless telegraphy in calling for help; but I am especially interested in knowing the condition of the weather which other ships are today experiencing. Such information is of distinct aid to me in anticipating what my weather conditions will be tomorrow or the next day. In this, wireless telegraphy is of great service."

Now the service which the wireless telegrapher is performing for the sea captain, the statistician is performing for the business man; for business conditions travel from one part of the country to another in distinct waves, as do storms; in fact, these waves travel in clearly defined courses from one country to another following steamship and other routes. Therefore, by watching business conditions *in all sections* and *in all lines* and doing this *every week* or two, in order to keep in touch with these *movements*, ascertaining the *direction* and *rate* of speed at which the various waves of prosperity and depression are travelling, any business man may anticipate very closely future changes in business. This is the work which statisticians are doing today for hundreds of manufacturers and merchants. Moreover, today's methods are very crude and capable of great development. However we all know that the fundamental principle is correct, and it is only a question of study and expenditure to be able to discover and trace all the major and minor trade movements which are slowly but surely moving across our globe.

This brings me to a brief description of the Composite Plot of Business Conditions, so-called, which, by the way, a great many business men today refer to as their "Barometer." In the course of preparing charts, statisticians have found that a very interesting method of showing at a glance the conditions of general business throughout an entire country consists of combining the charts on the various subjects above mentioned, such as failures, bank clearings, crops, immigration, etc., and making a composite plot thereof, like that herewith exhibited: (see Exhibit C).

This gives a sort of trial balance for the entire country. The line X-Y represents the country's normal growth, based on bank clearings, etc.; and the areas above this line of normal

growth, such as B and D, represent periods of abnormal prosperity; while the areas below this line of normal growth, such as A and C (and E which we are apparently now entering) represent periods of depression or readjustment. Like the maps, this aids the busy merchant to see at a glance the composite result, and obviates the necessity of studying individual charts. For instance, this Composite Plot shows at once whether the country is entering a period of prosperity or a period of depression, and roughly how far advanced is this period.

In the eyes of many statisticians, however, this Composite Plot has a great additional advantage in aiding the banker, merchant, or investor to anticipate business conditions. Those of us who belong to that class base our opinions largely on the belief that the fundamental law of "action and reaction being equal when the total force involved is considered" applies to business as well as to mechanics, chemistry, and every other known art or science. Although we are free to admit that these areas only roughly represent actual business conditions, owing to the insufficient number of subjects included, the method of weighting and other considerations, *yet we believe that if these areas properly represent actual conditions and the line X-Y is properly located, the areas below the line must—in the course of time—equal the areas above the line,—in areas, however, not in shape.*

For instance, the area D, having equalled approximately the three preceding areas A, B and C, is now nearly completed, and although it is theoretically possible that every business man may at once begin to study fundamental conditions and thus avoid either another boom or another panic, in which case there would be no more areas above or below the line X-Y, it is probable that we are now entering a period of rest and readjustment. Moreover, this conclusion fully coincides with the result obtained from a study of the waves of trade on the maps above referred to.

Whether, however, this area "E" will be a deep area of short duration, or whether it will be a shallow area of long duration, cannot be told at this time. Such knowledge can come to business men only by watching each week how this

area develops. As the sea captain studies barometric conditions by watching the *method of change* of his barometer, rather than by noting simply the actual atmospheric pressure for the time being, so many statisticians believe that if business men would study these maps, figures, and especially this Composite Plot each week, noting not only the actual conditions existing today, but also the method of change each week, they could readily anticipate future business changes.

It is needless for me to say to this audience that the banker, manufacturer, merchant, or investor who can even partially anticipate the future, so as to make his purchases and sales in accordance therewith, is a business success, while the man who is unable to do this is ultimately a failure. Moreover, the work of the statistician is not only a distinct aid to his employer in directing his buying, selling, producing and distributing, but I believe each one of us engaged in such work is rendering a great service to this nation, the future of which depends not on tariffs or ship-subsidies, not on Sherman Laws, nor on any other such legislation, but on educating our bankers, manufacturers, and merchants in the fundamentals of uprightness and economics. In other words, the future of this country depends on the preacher and the statistician.